

Analysis of Burkina Faso's Institutional Framework and Budget Allocations for NCDs Control and Monitoring

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Abstract

Diet-related non-communicable diseases (NCDs) are a major public health issue and a global development challenge today. However, governance responses to these diseases remain in their infancy in most low-income countries, including Burkina Faso. How Burkina Faso organizes itself institutionally and financially to adequately address NCDs is still unknown to the scientific community. This study aimed to analyze Burkina Faso's institutional framework and budget allocations related to NCDs. A cross-sectional survey was conducted, using a mixed-methods approach (qualitative and quantitative data collection). The analysis highlighted several institutional challenges hindering effective NCD prevention and management in Burkina Faso. These include (i) the absence of a multi-sectoral policy or strategic plan involving all stakeholders, (ii) the lack of a multi-sectoral coordinating body, and (iii) insufficient financial resources. A total of twenty-nine (29) budget lines related to NCD prevention and/or management were identified, amounting to 17.33 billion FCFA (\$29.8 million), or an average of \$2.72 million per year. This represents only 1.55% of the total budget of the Ministry of Health over the same period. To address these challenges, we recommend the development of a national multi-sectoral policy that clearly defines the roles and responsibilities of each stakeholder, the establishment of a coordinating body, increased funding, and greater integration of NCD prevention and management into primary healthcare services.

Keywords

Governance, Institutional Framework, Financial Allocation, Non-Communicable Diseases

1. Introduction

Diet-related non-communicable diseases (NCDs) are today a major public health issue and a global development challenge [1]. Also known as chronic diseases, they include obesity, cardiovascular disease, diabetes, cancer, hypertension, hyperglycemia and oral diseases [2]. According to the Global Panel's experts, the health risks of chronic food-borne diseases are greater than the combined risks of tobacco, alcohol and unprotected sex [3]. NCDs account for over 50% of total premature mortality (*i.e.* deaths under the age of 60) in most low- and middle-income countries [4] [5]. This is compounded by insufficient budgetary allocations to the fight against NCDs over the last ten years [6]. According to the results of STEPS surveys in Burkina Faso, the prevalence of obesity (BMI > 30 kg/m²) rose from 11.3% in 2013 to 15.9% in 2021 in urban areas [7] [8] and WHO estimates that over 35% of deaths in Burkina Faso are due to NCDs [9]. Numerous localized studies in Burkina Faso have revealed similar trends regarding non-communicable diseases and risk factors. In 2015, a study conducted in the Zondoma province found a prevalence of 4.08% for newly diagnosed diabetes and 8.1% for moderate fasting hyperglycemia [10]. Other authors have shown that among patients admitted to the cardiology department at Schiphra Hospital, 31% were obese (24% women and 7% men). The same study also revealed that 50% of the patients had dyslipidemia, characterized by elevated levels of triglycerides and LDL-C ("bad cholesterol") in both sexes [11]. Another study involving 1481 participants found that the overall weighted prevalence was 9.4% (95% CI: 7.3% - 11.4%), with a significant difference between semi-urban and rural areas: one in 10 adults was hypertensive in semi-urban areas, compared to one in 20 in rural areas [12]. Although these studies are localized and not representative of the general population, they highlight that the issue of non-communicable diseases in Burkina Faso represents a significant public health challenge. The cost of inaction far outweighs the cost of action against non-communicable diseases, as recommended in the global action plan proposed by the WHO [13]. However, it is encouraging to note that several global initiatives have been launched to tackle the global burden of NCDs [14]. The World Health Assembly has adopted a global action plan for 2013 - 2020 on NCDs that calls for country-level capacity building, leadership, governance, multi-sectoral action and partnerships to accelerate the fight against NCDs in countries [15]. Despite international interest in the fight against NCDs, the response in most low- and middle-income countries is still in its infancy [16] [17]. Yet with the rapid socio-economic transitions taking place in sub-Saharan Africa, if nothing is done, there is a risk that the growing prevalence of NCDs will overwhelm already struggling health services, with adverse consequences for individuals and economies [2] [18]. WHO estimates that NCDs will be the leading cause of death in sub-Saharan Africa by 2030 [19]. Ouedraogo *et al.* showed that many concerns about the governance of NCDs remain unresolved in most ECOWAS countries, namely the question of institutional arrangements and funding for NCD control [17]. The aim was to analyze Burkina Faso's

institutional framework and budget allocations for NCD control.

2. Methodology

The theoretical approach is based on Grounded Theory (GT) [20]. GT advocates for an analytical approach that emphasizes the use of data from multiple sources to triangulate the information collected. The core principle involves a constant iterative process of comparing the results of the analysis with the collected data [20]. On one hand, we conducted a cross-sectional study based on the collection (quantitative and qualitative) from key informants, combined with a literature review and an analysis of budget allocations [21]. On the other hand, the methodological approach draws from the SUN Movement framework [22], as adapted by UNICEF [23]. For the purposes of this study, we further adapted this methodology to focus on non-communicable diseases. Consequently, the budget lines examined in this phase are specifically those related to the prevention and control of NCDs.

2.1. Target Population

The survey primarily engaged key stakeholders from the from the Ministry of Health, who were identified through a review of the 2016 - 2020 integrated strategic plan for combating Non-communicable diseases (PILMNT) [24]. These individuals were selected based on the active involvement of their respective departments in the implementation of the plan. Specifically, this includes all technical directorates and other departments within the Ministry of Health, as well as other ministerial departments that are directly or indirectly involved in the implementation of the strategic plan's interventions. The respondents were required to (i) be in charge of their respective structure (or be designated by the person in charge); (ii) provide informed consent to participate in the study; (iii) have been involved in the project. Individual 45-minute interviews were conducted with key stakeholders based on their availability. While most participants requested anonymity and expressed reservations about the use of audio recording devices, we accommodated their preferences by taking detailed notes in most cases. However, due to scheduling conflicts, we were unable to meet with all the technical directors initially targeted, which posed a limitation to the study. Another constraint was institutional instability, as several of the managers we interviewed had only recently assumed their roles. This limited our ability to gather comprehensive information on ongoing initiatives within their respective departments.

A total of 20 interviews were conducted with (15) technical structures of the Ministry of Health and Public Hygiene and five (5) NGOs/Associations working in the health sector. The data collection process was conducted over a three-month period, spanning from January to March 2023.

2.2. Tool and Data Collection

A semi-structured questionnaire built around the components of NCDs governance proposed by Ouedraogo *et al.* notably (i) involvement in the elaboration of

reference documents, notably the PILMNT; (ii) multi-sectoral collaboration; (iii) availability of a common results framework; (iv) existence of a consultation framework; (v) availability of sufficient resources for the implementation of national interventions.

Regarding the analysis of financial allocations, we examined the resources and expenditures executed by the Ministry of Health between 2010 and 2020. These data were sourced from the integrated financial management system (CID), a platform established by the Burkinabe government to consolidate information on budget allocations, expenditures, and transfers to local authorities and public institutions. This platform, housed within the Ministry of Economy and Finance, serves as a reliable source for tracking expenditures in Burkina Faso across all sectors. These data were extracted in Excel format in March 2023, at the request of the research team. This database allowed the research team to examine in detail and then extract the budget lines related to NCDs.

In accordance with the guidelines of the methodology, budget lines such as (i) payment of civil servants' salaries, (ii) operation of general and technical services; hospitals, health districts, training establishments, etc.; (iii) organization of examinations, competitions and operating and project expenses were not considered.

The budget lines selected during the database review were categorized and then weighed. The categorization consisted of classifying the budget lines into three distinct groups: "NCD-specific", "NCD-sensitive", and "NCD-friendly investment" (**Figure 1**).

- A budget line was classified as "NCD-specific" if it directly targeted a primary objective related to NCDs (Non-Communicable Diseases) or had a clear impact on a direct determinant of NCDs in Burkina Faso. This classification was based on existing literature and a causal analysis of NCD occurrence in the country.

- Budget lines were deemed "NCD-sensitive" when they demonstrated a clear influence on indirect determinants of NCDs. In such cases, only the portion of the budget allocated to the specific program or intervention was considered (The same applies to a program/intervention recognized as directly related to NCDs but whose primary objective is not originally 'NCD-related').

- If a budget line was identified as having the potential to contribute to improving the NCD situation in Burkina Faso, but the pathway to impact was long and uncertain, it was categorized as "positive investments". Notably, this category was excluded from the total nutrition allocations.

The weighting made it possible to assign a rate to each line based on the contribution estimated by the authors to the prevention and management of non-communicable diseases. This weighting rate was determined based on the scientific information available both in literature and at the national level [13] [25]. When a budget line was considered by the authors as specific to NCDs, this line received a weighting rate of 100%. Those that were considered sensitive to NCDs based on available scientific information were given three weighting levels by the authors depending on the estimated sensitivity level, namely 10%, 25% and 50% (low, me-

dium and high respectively). Budget lines considered as favorable investments were not included in the total NCDs expenditure, *i.e.* a weighting rate of 0%.

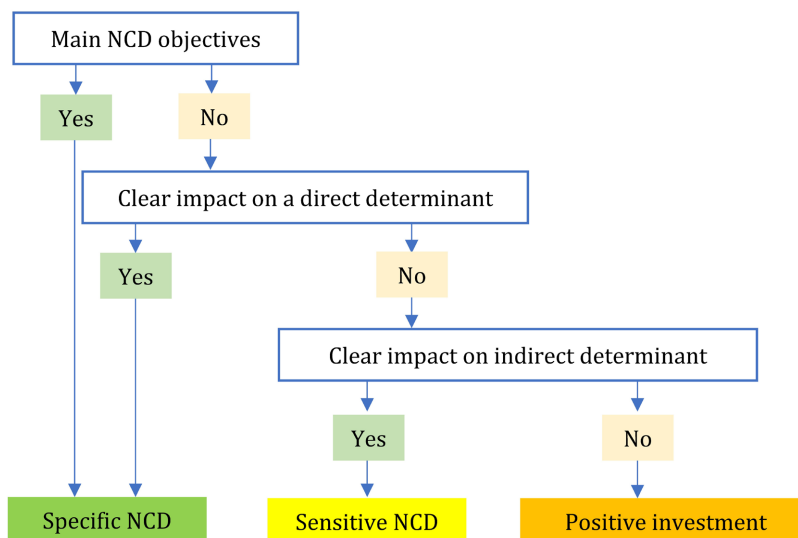


Figure 1. Conceptual framework for categorizing pro-NCD budget line.

3. Ethical Consideration

The study was approved by the Ethics Committee for Health Research (CERS) in Ouagadougou, Burkina Faso. Additionally, authorization was obtained from the Ministry of Health of Burkina Faso to collect information from the managers of the targeted structures. All participants interviewed as part of this study provided verbal consent prior to their interviews.

Data Processing and Analysis

An analysis matrix was designed and subsequently populated using data from the various transcripts. The matrix was then analyzed by thematic group. This analysis focused exclusively on actors from the Ministry of Health. The level of collaboration was assessed primarily based on participants' statements, with verbatim quotes used to support the findings.

The database, obtained after detailed examination, categorization and weighting, was processed using Stata 12. The analysis was primarily descriptives, involving frequency calculations. Observed differences were evaluated using the student t-test, with a significant level of 5% and a 95% confidence interval.

4. Results

4.1. Institutional Arrangements

The literature review, particularly an examination of the organizational chart of the Ministry of Health, reveals that Burkina Faso has established a Department for the Prevention and Control of Non-Communicable Diseases (DPCM) within the General Directorate of Health and Public Hygiene. This department was created

to better coordinate all NCD control programs and consolidate efforts at the national, sub-regional and international levels (Figure 2). In addition to this technical department, there are other departments whose missions directly or indirectly include the fight against NCDs. For example, the Nutrition Directorate implements the Multisectoral national nutrition policy 2020 - 2029, one of whose key strategic objectives is “Strengthening the fight against overnutrition and nutrition-related chronic non-transmissible diseases” (Strategic Axis III) [26]. Although these structures operate under the same general directorate, they appear to function primarily as technical units rather than as dedicated entities for program management and implementation. Indeed, interviews revealed that each structure develops its own action plans and annual work plans, often in a compartmentalized manner, with limited coordination between departments.

“..... If not, as long as each department works in isolation from the other, it will be difficult to achieve the expected results, as each department will pursue its own agenda rather than the common agenda of the general management.....” Alongside these technical directorates, there are other structures such as the National Agency for Environmental, Food, Occupational and Health Product Safety (ANSSEAT), whose mission is just as important in the fight against and prevention of NCDs in Burkina Faso, but no functional link between the DPCM and ANSSEAT was noted by the actors interviewed.

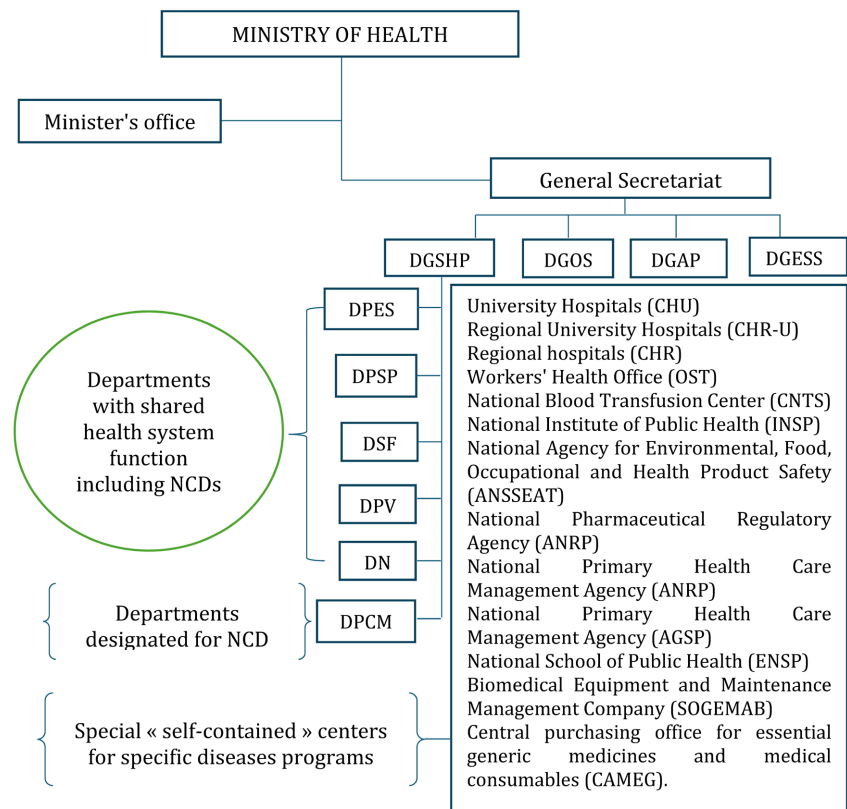


Figure 2. Adapted organization chart of disease-specific structures and overall health function structures within Burkina Faso’s Ministry of Health.

4.2. References Documents

The review of documents and interviews conducted revealed the existence of several reference documents related to the prevention and control of food-related NCDs across various service directorates. In 2016, the Department for the Prevention and Control of Non-Communicable Diseases (DPCM), the primary structure responsible for NCD prevention and control, developed an integrated strategic plan to combat NCDs (2016 - 2020), with a budget of 5,469,734,500 FCFA (approximately \$9.8 million dollars). In addition to this integrated strategic plan, the DPCM has implemented other plans, including (i) the three-year oral health strategic plan, (ii) the strategic action plan to combat cancer, both of which are currently being implemented alongside the integrated strategic plan, which expired in 2020. It is important to note that the integrated strategic plan to combat NCDs was not evaluated either at mid-term or upon completion of its implementation, although the DPCM has initiated a review of this reference document. Although all the stakeholders interviewed recognize the need to revise the plan to align it with new requirements for the prevention and control of NCDs, they unanimously agree (100% of respondents) that an evaluation of the current plan should have been conducted to identify its shortcomings and bottlenecks. This would have allowed for corrections to be incorporated into the new reference framework currently being developed. As one interviewee noted, “*The development of such a document should be based on evidence and new WHO guidelines unfortunately the implementation of the plan has not been evaluated to assess the strengths and weaknesses of the current plan prior to the update*”. In addition to these documents, Burkina Faso has implemented several measures to combat and control NCDs, including (i) a smoking ban, (ii) a ban on tobacco advertising, promotion and sponsorship, (iii) restrictions on the physical availability of alcohol, (iv) an increase in alcohol excise duties, (v) restrictions on the marketing of breast-milk substitutes, (vi) significant measures to improve cancer treatment.

4.3. Involving Stakeholders in the Design Process

Sixty percent (60%) of those interviewed stated that they had participated in the development of the integrated plan to combat NCDs. However, it should be noted that some technical structures within the Ministry of Health reported that they were not involved in the drafting process. Forty percent (40%) of stakeholders, particularly NGOs and Associations, indicated that they were excluded from the process. As one interviewee emphasized, “*the drafting of the document was not as participatory; it was mainly involved Ministry of Health players and NGOs/Associations working in the field of NCDs*”. Another interviewee added, “*.....other ministerial departments such as agriculture, education, trade, water, hygiene and sanitation have not been involved in the process, even though they have a role to play, so I don't think they feel concerned, even though everyone has a role to play*”.

4.4. Existence of a Coordinating Body or Mechanism

All interviewees (100%) agreed that the Ministry of Health is leading the fight against NCDs in Burkina Faso. However, an analysis of the actors involved in implementing the integrated strategic plan to combat NCDs suggests that planning has been multi-sectoral. Out of the 32 actors identified, 28% were from other ministerial departments outside the Ministry of Health, 9% from the academic sector, 6% from the private sector, and United Nations agencies.

Regarding multi-sectoral coordination or coordination mechanisms, no formal bodies have been established at either the sectoral (Ministry of Health) or national level. All interviewees (100%) also lamented the absence of a consultation framework among these actors to ensure better coordination in implementing interventions. As one informant stated: *“the fight against NCDs is multi-sectoral and cannot be handled by the health sector alone. The problem is that the roles and responsibilities of each player involved are inadequately defined..... Another issue is the lack of a framework for concerted action, unlike in the fight against malnutrition”*.

4.5. Resource Availability

The interviewees (100%) highlighted the inadequacy of resources allocated to the fight against NCDs in Burkina Faso, both in the state budget and from technical and financial partners:

One interviewee noted, *“.....most of the interventions set out in the integrated strategic plan to combat NCDs have not been implemented, due to insufficient or even non-existent resources”*, Another added, *“..... it’s as if all the efforts of both the state and its partners are directed towards combating malnutrition, yet the burden of these NCDs is just as real for our populations”*.

They also pointed out the lack of international enthusiasm for raising funds to address NCDs. As one interviewee emphasized, *“..... for example, every year, Burkina Faso conducts nutritional surveys with the support of technical and financial partners to assess the nutritional status of children under five. However, in 10 years, Burkina Faso has only carried out two (2) STEPS surveys, which clearly demonstrates the level of interest in NCD-related issues in our country”*.

The interviewee interpreted this as a clear indicator of the lack of commitment and interest in addressing NCDs in developing countries in general, and in Burkina Faso in particular.

4.6. Allocations Dedicated to NCDs

We identified twenty-nine (29) lines in the database with allocated amounts based on the analysis conducted. These lines were all linked either to the prevention of non-communicable diseases or both at the same time. Of the 29 lines, three (3) were considered “NCD-specific”, eighteen (18) were “NCD-sensitive” and eight (8) were considered “positive investments”.

4.7. Amount Allocated and Spent

The Ministry of Health allocated approximately 17.33 billion FCFA (29.9 million USD) between 2010 and 2020 for activities related to the prevention and control of non-communicable diseases (NCDs) in Burkina Faso, averaging 2.72 million USD per year. This amount represents about 1.5% of the ministry's total budget during the same period, with a resource utilization rate of over 98%. Specific interventions represented 6.64 billion or 38.4% and sensitive interventions 10.68 billion or 61.6%.

4.8. Allocation Trends

We observed an upward trend during the period under consideration. Allocations increased from 365 million in 2010 to more than 5 billion in 2017. Between 2017 and 2020, there was a reduction of more than 62%, from 5.019 billion to 1.877 billion (Figure 3).

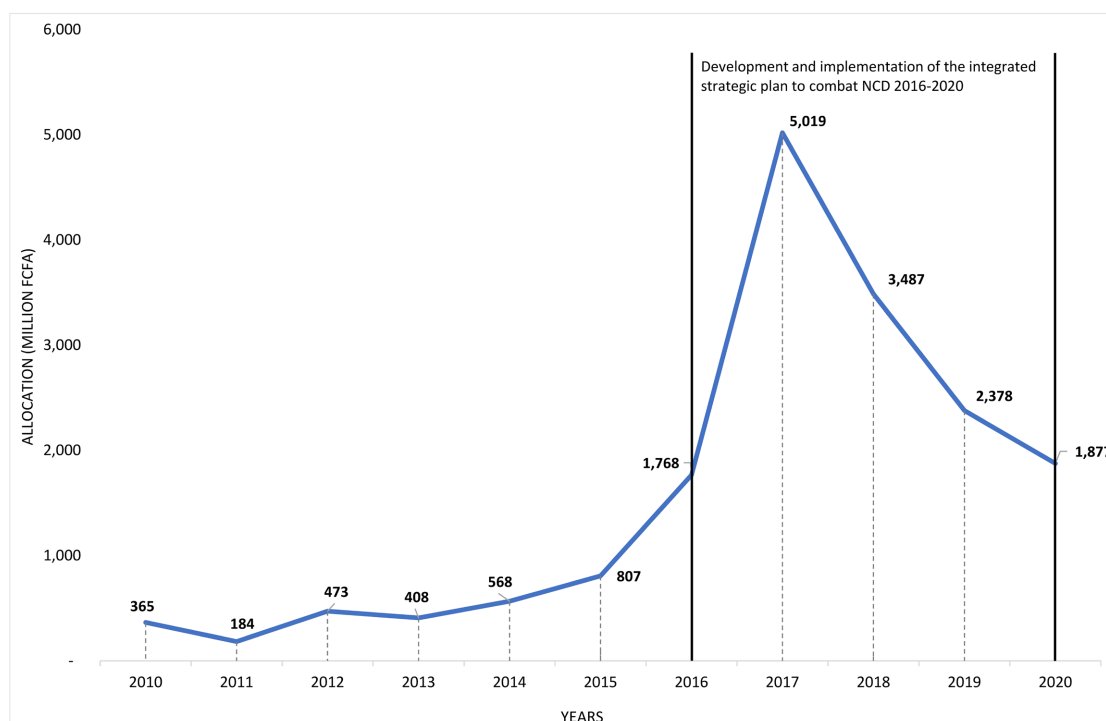


Figure 3. Evolution of allocations during the study period.

4.9. Allocations before and after the Development of the Integrated Strategic Plan for the Fight against NCD 2016

We observed that immediately after the drafting and adoption of the NCD strategic plan in 2015, the annual budget dedicated to NCDs doubled. It increased from 807 million in 2015 to 1.87 billion (CFA) in 2020 (Figure 4). The allocated amounts peaked in 2017 at 5.019 billion, representing 522% compared to 2015, the year before the adoption of the strategic plan. Figure 4 illustrates a clear increase in average allocations before and after the implementation of the plan.

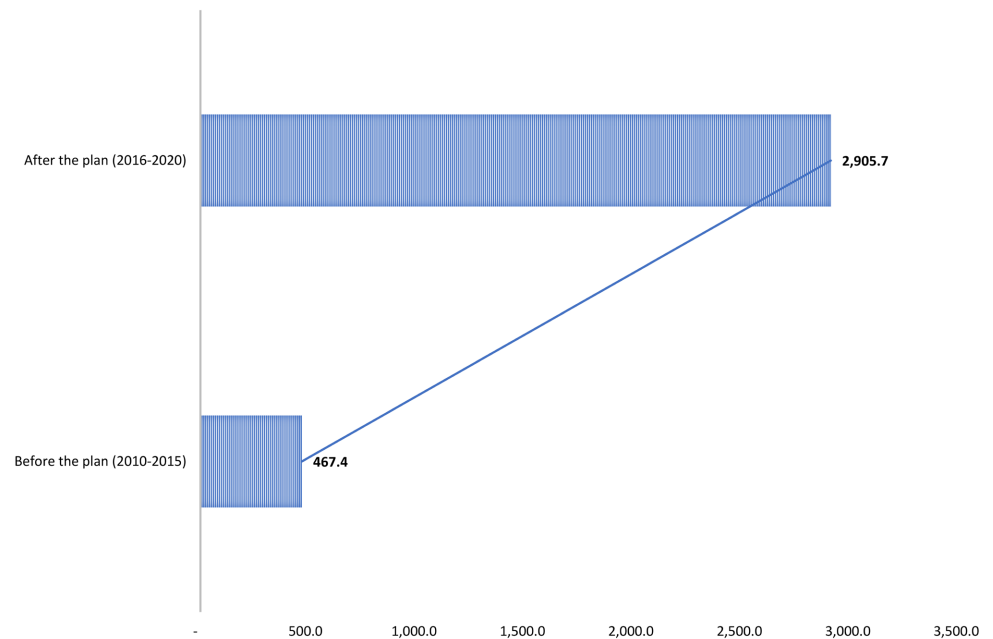


Figure 4. Evolution of allocations during the study period.

5. Discussions

This study addresses one of the concern raised by Ouedraogo *et al.* [17], regarding institutional arrangements and budget allocations for the prevention and control of NCDs in Burkina Faso.

Burkina Faso has developed several reference documents related to the fight against NCDs, notably the integrated plan to combat NCDs (2016 - 2020). However, this document was primarily drafted at the level of the Ministry of Health and did not sufficiently involve other ministerial departments such as agriculture, education, water, hygiene and sanitation, and the private sector. This despite the fact that the multisectoral nature of combating food-related NCDs has been well-documented by several authors [13] [27]. In contrast, countries like Morocco and Algeria have adopted more inclusive approaches. For instance, Morocco has established a national multisectoral strategy for the prevention and control of non-communicable diseases, while Algeria has developed a national multisectoral strategic plan for the integrated fight against the risk factors of non-communicable diseases [28] [29]. Similarly, Ghana has implemented a national policy for the prevention and control of NCDs (Ghana NCD Policy 2014) [30]. Such reference documents, developed through a multi-sectoral approach and with a scope, facilitate high-level commitment and stronger advocacy for resource mobilization [6] [31]. They also help create an environment conducive to the adoption of healthy behaviors [32]. Given these considerations, it is essential for Burkina Faso to develop a multisectoral policy or plan for the prevention and control of NCDs as soon as possible. This is particularly urgent as the World Health Organization (WHO) notes that Burkina Faso currently lack any comprehensive documents on this subject [9].

Burkina Faso lacks a consultation framework or common results framework that could enable multisectoral action and coordination in the fight against NCDs. Yet, such a framework is essential for optimal programming and implementation of interventions, ensuring accountability among the actors involved [13] [27] [33]. This situation is not unique to Burkina Faso within the ECOWAS region. For example, Ghana, which has had initiatives to combat NCDs since the 1990s and even adopted a national policy on NCD, has also struggled to establish an effective multisectoral consultation framework [30]. The implementation of such a framework can, in some cases, lead to better monitoring and greater synergy among partners around shared priorities. Some countries, like Morocco, appear to have successfully established such a consultation framework. This success is likely attributable to the participatory and multisectoral approach adopted from the initial stages of document development. Such an approach facilitates multisectoral coordination and enables better mobilization of financial and human resources for policy implementation [6] [31] [34].

The absence of multi-sectoral programming and a multi-sectoral consultation body, as observed in Burkina Faso leads to overlapping function and ineffective resource mobilization [35]. This issue is particularly concerning in a context where international development aid to address this burden remains negligible [36]. This observation was clearly highlighted by key informants, who unanimously emphasized the insufficient resources allocated to NCDs in Burkina Faso. They even noted that NCDs do not appear to be a priority for either the state or its partners, as reflected in the limited resources dedicated to the issue. A budget analysis conducted for the period 2010 - 2020 revealed that the Ministry of Health in Burkina Faso allocated only 1.5% of its sectoral budget to the fight against NCDs, amounting to approximately 17.33 billion FCFA (29.9 million US dollars). This finding supports the statements of the interviewees.

WHO estimates that annual investment in NCD interventions ranges from less than US\$1 per person in low-income countries to US\$3 per person in upper-middle-income countries [37]. Although it is difficult to clearly establish the impact of Burkina Faso's integrated plan on the increase in budget allocations observed after its adoption in 2015, the process of developing the plan has contributed to a better understanding of the problem. It has also helped structure and quantify the response more effectively, thereby clarifying investment opportunities [4] [13] [38]. For example, the plan emphasized the importance of "female cancer screening," which is considered one of the most cost-effective interventions in the fight against NCDs, with a cost-effectiveness ratio of \leq \$1 according to WHO [25]. The inadequate allocation of resources to combat and control NCDs has been documented by the Ghana Noncommunicable Diseases Alliance, which identified funding as a major challenge but acknowledged that data on budget allocations for NCDs in Ghana are unavailable. It is evident that there is a significant lack of resources allocated to combating NCD. Yet low and middle income countries like Burkina Faso could gain up to \$350 billion by 2030 by increasing investments in NCD prevention and treatment [39]. According to WHO, for every dollar in-

vested in scaling up the response to NCDs in low- and middle-income countries, society will see a return of at least \$7 in the form of increased employment, productivity and longer life expectancy [39]. Burkina Faso would therefore benefit significantly from investing more in the fight against NCDs, given the ever-increasing burden of these diseases.

To our knowledge, this is the only study in Burkina Faso that has addressed questions regarding the institutional environment and budgetary allocations for the fight against NCDs. However, it is important to acknowledge the methodological limitations of this study, which include: (i) insufficient consideration of reference documents from other ministerial departments; (ii) institutional changes in Burkina Faso, which have led to frequent turnover in leadership positions within state structures, potentially influencing the responses of interviewees depending on their tenure; (iii) the analysis being limited to state allocation due to the difficulty of obtaining accurate data on funding from technical and financial partners; and (iv) the absence of a common multisectoral results framework listing consensual interventions for the fight against NCDs in Burkina Faso, making financial monitoring across other contributing sectors challenging.

6. Conclusions

The analysis of the institutional framework and budget allocations for the prevention and control of NCDs reveals significant challenges within Burkina Faso's institutional system. Addressing NCDs must be approached as a comprehensive system requiring appropriate and sustainable investments. The analysis highlights several obstacles hindering the effectiveness of NCD prevention and control efforts in Burkina Faso, including: (i) the lack of accurate estimates of the burden of NCDs; (ii) the absence of a multisectoral policy or strategic plan involving all stakeholders; (iii) the lack of a multisectoral coordination body; (iv) insufficient financial resources; and (v) limited research on the issue of NCDs.

Despite these shortcomings in the institutional framework for combating NCDs, it is important to acknowledge that Burkina Faso has made some progress in the fight against NCDs. This includes the adoption of numerous texts and laws aimed at reducing exposure to modifiable risk factors for NCDs and addressing their underlying social determinants. Additionally, several specific and sensitive budget lines for the prevention and control of NCDs have been identified in the national budget, despite the challenging security and humanitarian situation the country has faced since 2018. This demonstrates political will and a favorable environment, even in a context marked by resource scarcity.

However, much work remains to be done, particularly given the high and growing burden of NCDs in low- and middle-income countries like Burkina Faso.

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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